

REMARKS

This Amendment, filed in reply to the Office Action dated June 25, 2007, is believed to be fully responsive to each point of rejection raised therein. Accordingly, favorable reconsideration on the merits is respectfully requested.

1-10 are all the claims pending in the application.

I. Analysis of Claim Rejections - 35 U.S.C. § 112

It is alleged that the “first connection” recited in claim 2 has insufficient antecedent basis.

In this Amendment, Applicant amends claims 2 and 3 such that the “first connection” and the “second connection” as recited therein are amended to the “connection to a radio network controller” and the “connection to the at least one access point”, respectively, based on claim 1 which claims 2 and 3 depend on.

Accordingly, Applicant respectfully requests withdrawal of this rejection.

II. Analysis of Claim Rejections - 35 U.S.C. § 102

Claims 1-3 and 10 are rejected under 35 U.S.C. § 102(3) as allegedly being anticipated by Bichot et al. (US Pub. 2004/0001468: hereinafter “Bichot”).

In rejecting **claim 1**, the Examiner reads the claimed interface unit on the interworking unit (IWU) 18 as shown in Fig. 1 of the reference.

Applicant respectfully traverses the rejection.

In the art, two coupling architectures are employed to provide communication (or connectivity) handover between UMTS¹ and WLAN: tight coupling and loose coupling. In tight coupling, in order to enable improved handover between two heterogeneous networks, communication signal transferred from a WLAN to a UMTS is controlled by a core network such as 102 of Fig. 1 and 302 of Fig. 5 in the present application.

By contrast, loose coupling is generally used when a WLAN is not operated by a core network or a cellular operator. Thus, the data transmitted from a WLAN to UMTS may not be controlled by a core network or a cellular operator.

That being considered, Bichot, directed to loose coupling (see Abstract), does not provide an IWU or interface unit which functions as the claimed interface unit. Rather, the IWU 18 of the reference may not be able to provide the claimed functions. This is mainly because while the claimed interface unit is configured to be applied to tight coupling which requires a controlling role of a core network through a radio network controller (RNC), the interworking unit (IWC) 18 of the reference working in loose coupling architecture does not need such controlling role of a core network through the RNC 22.

Discussing in view of each element of the claim, the reference does not disclose the conversion of a communication protocol as recited in the claim.

The Examiner alleges that paragraph 17 of the reference discloses the third component of the claim for converting protocols. However, this paragraph only mentions a

¹ 3rd Generation Partnership Project/ Universal Mobile Telecommunications System

communication between a radio network controller (RNC) 11 and the interworking unit (IWC) 18, but does not disclose conversion of any protocol. To teach the claimed third component, there should be at least a suggested protocol change such as a conversion of a protocol between the RNC 11 and the IWC 18 to another protocol between the IWC 18 and the access point (AP) 16, or vice versa.

Instead, in paragraphs 15-16, the reference only suggests that any protocol change may not be necessary in the reference. The reference discloses here that the IWC 18 only permits a linkage between the mobile terminal (MT) 14 and the mobile telephony network 12 so that control information exchange is possible between the WLAN 10 and the mobile telephony network 12. In other words, this linkage is established only to provide a path between the MT and the network 12. Further, paragraph 16 describes that IWC 18 functions only as multiplexer and demultiplexer that data pass through. As long as the reference is directed to loose coupling, it may not require a controlling role from the RNC 22, and thus may not be necessary for the IWC 18 to convert the protocol shared with the WLAN 10 to another protocol shared with the RNC 22. From this disclosure, it is only assumed that communication signals pass through the IWC, but the claimed protocol conversion cannot read on the reference.

Thus, the reference fails to teach the claimed third component for protocol conversion.

Next, the Examiner simply alleges that the signal path of Fig. 1 discloses the claimed fourth component for providing data indicative of a load situation of at least one access point (AP) to the RNC.

As described in the reference, however, whether any signal path in Fig. 1 is used for providing data indicative of a load situation of the AP 16 is not even suggested throughout the disclosure of the reference. As noted again, the claimed interface unit is provided so that it can be applied to tight coupling of two different networks which enables enhanced handover of wireless terminals through a core network. In this respect, the fourth component of the claimed interface unit is configured to provide data indicative of a load situation of an AP to the RNC. On the contrary, the reference directed to loose coupling, there may not be any necessity for the core network to get involved in load balancing based on the load data for each AP. While there is not such necessity, there is also not any suggestion in the reference disclosure that the load of the AP 16 is reported to the RNC 22 by the IWC 18. Thus, again, the IWC 18 not only does not report the load of the AP 16, but also is not configured to provide such load information to the RNC 22.

Accordingly, the reference also fails to disclose the claimed fourth component for providing load information.

Therefore, at least for the foregoing reasons, Applicant respectfully submits that claimed interface unit would not have been anticipated by Bichot.

Claims 2 and 3 should be patentable at least due to their dependencies.

Claim 10 is amended to incorporate the components of the interface unit as recited in claim 1. Accordingly, Applicant submits that this claim also would not have been anticipated by Bichot.

III. Analysis of Claim Rejections - 35 U.S.C. § 103

Claim 4 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Bichot as applied to claim 1 further in view of Chuah.

In rejecting claim 4, the Examiner relies on the load balancing between Nodebs or between RNCs as shown in the radio access system of Fig. 3 of Chuah. Note, however, the claimed load balancing is performed by the interface unit which is separately connected to the RNC in a separate communication protocol. This interface unit is not disclosed in this reference as it is neither any element of the RNC of the reference nor an access point or base station of the reference.

Accordingly, while Chuah simply suggests load balancing between access points, this reference does not teach such load balancing is performed by the claimed interface unit. In addition, even though the teaching of load balancing in Chuah is combined to Bichot, the load balancing between APs in Bichot will be handled by the RNC 22 but not by the IWC 18. This is inconsistent with the claimed invention.

Therefore, Applicant respectfully submits that claim 4 would not have been obvious over the references regardless of its patentability based on the claim dependency.

Claim 5 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Bichot as applied to claim 1, above, further in view of Soderbacka et al (US Pub 2003/0114158: hereinafter "Soderbacka").

In rejection claim 5, the Examiner alleges that the handover scheme shown in Fig. 1 of Soderbacka, which might suggest handover between two heterogeneous networks, i.e., between a 3G UTRAN 1 and a 2G GSM network.

Note, however, that the claimed handover occurs between two access points in a logical cell of a WLAN. This handover is not between any two of a WLAN, a UMTS, 3G UTRAN², and 2G GSM. Moreover, the handover as recited in the claim is performed by a component of the interface unit, which is distinguished from any RNC, AP or wireless terminal. In this respect, Soderbacka clarifies in paragraph 63 that the handover between the 3G UTRAN 1 and the 2G GSM is performed by the SGSN³ which belongs to a core network. From this, even though the SGSN may correspond to the RNC as recited in claim 1, the SGSN may not correspond to the claimed interface unit.

Thus, Soderbacka does not teach the handover between APs within a logical cell as claimed. In addition, even though the teaching of handover in the reference is combined to Bichot, the handover between APs in Bichot will be handled by the RNC but not by the IWC 18. This is inconsistent with the claimed invention.

Therefore, Applicant respectfully submits that claim 5 would not have been obvious over the references regardless of its patentability based on the claim dependency.

Claims 6 and 7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Chuah as applied to claim 1, above, further in view of Bichot.

² UMTS Terrestrial Radio Access Network

³ Serving GPRS Support Node (GPRS: General Packet Radio Service)

Again, as Bichot fails to disclose the claimed interface unit providing, *inter alia*, the load information to RNC, claim 6 would not have been obvious over the references.

Claim 7 should be allowable at least for the similar reasoning discussed for claim 4, or its dependency on claim 6.

Claims 8 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Chuah as applied to claim 1 in view of Bichot.

Claim 8 should be allowable at least for the similar reasoning discussed for claim 5, or its dependency on claim 6.

Claim 9 should be allowable at least due to its dependency.

IV. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

AMENDMENT UNDER 37 C.F.R. § 1.111
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Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Seunghee Park', is written over a horizontal line.

Seunghee Park
Registration No. 60,719

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

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